

XV.—On the Teeth of the Genus *Mitra*, Lamarck.

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THE greater the number of examples of the different genera of Gasteropodous Mollusca I have been able to examine, the more I am convinced of the importance of the characters afforded by the teeth of these animals, both for arranging the species and genera into natural groups and characterizing them. The general results of my recent observations have been to verify the views I have from time to time published in this Journal on the subject. Within the last few days, however, I have been enabled to examine the teeth of six species of the genus *Mitra* of Lamarck, and with a very curious result. The teeth of each of the species are very different, and, what is still more extraordinary, they belong to three very different kinds: thus, *Mitra Grœnlandica* is the only one which has the single *rachiglossal* tooth of the *Volutidæ*, which is like that of the *Cymbiola Turneri* in form.

*Mitra episcopalis*, *M. adusta*, *M. Ticaonica*, and *M. cucumerina*, as belonging to the restricted genus *Mitra*, have three series of *odontoglossal* teeth like the family *Fascioliariadæ*. The broad lateral teeth, which were alone figured by Quoy and Gaimard as the teeth of the genus, are very uniform in shape and structure in the different species; while the central tooth of each offers considerable variation. In *Mitra adusta* it is narrow, and has only a single, very long, hook-like apex, while in the other species it is broader, with from five to eight teeth on its upper edge.

Lastly, *Mitra Caffra*, which belongs to Montfort's genus *Turris*, has the three series of *hamiglossal* teeth of *Muricidæ* and *Buccinidæ*.

This is another striking instance of the impossibility of arranging Gasteropodous Mollusca from the examination of the shell alone.

The genus *Mitra* was peculiar before for having some species with a distinct operculum, while the major part of them were without one. Unfortunately I have not yet been able to examine the teeth of an operculated species.

I may further observe, as connected with the family *Volutidæ*, that I have examined the proboscis of *Mitra (Cylindra) Dactylus* without being able to discover any teeth, but this may have arisen from the bad state of the specimen. The proboscis of this animal differs from the hard, smooth, rigid form of all the other species I have seen, in being of a spongy texture and closely covered with large conical warts externally.

*Marginella (quinqueplicata)* has a single *rachiglossal* series of

teeth like *Volutide*, which are broad, lunate, with nine small, conical, rather distant, transparent denticles on its front edge. *Voluta* (*Vespertilio*) has a single series of three-toothed teeth on the tongue like *Yetus* and *Cymbium*, but the central toothlet is much longer than the lateral ones.

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### BIBLIOGRAPHICAL NOTICES.

*Système Silurien du Centre de la Bohême.* 1<sup>ère</sup> partie, *Recherches Paléontologiques. Trilobites*, par J. BARRANDE. 2 vols. 4to.

THE history of the palæozoic formations, both as regards the development of the organic life of the period and the physical conditions under which they were accumulated, appears almost to be more clearly revealed to us than that of the more recent accumulations of the later tertiary period. That a knowledge of the primæval fauna of our planet should be invested with peculiar interest to the zoogeologist can scarcely be doubted, either in its relation to existing nature, or as pointing out to us the peculiar types of the earliest forms of animal existence. But few years have elapsed since a vast portion of the earlier fossiliferous rocks were classed under the names of greywacke and clay-slate, and were considered entirely destitute of organic forms. Traces of them were, however, discovered in the Scottish series by the acute geologist Hutton, and other observers, as Lhwyd, &c., had also noticed them in some localities. From the comparative rarity of the fossil organisms in the palæozoic formations known at that period, they could not have been used as a means of distinguishing the different members of the series, nor indeed was the attempt made so to classify them; for the great principle of characteristic fossils, subsequently enunciated by W. Smith, was applied chiefly to the secondary group of rocks. Little, however, was effected in the classification of these older greywacke rocks until the border counties of England and Wales and a portion of the Principality itself was made the special object of some years' study by Sir R. Murchison, who, "par ses conquêtes sur la nuit du temps," first initiated us with a knowledge of the earlier palæozoic epoch, comprising the Silurian system. From that period the active researches of geologists have demonstrated the existence of this group throughout large portions of the globe, characterized on the whole by similar forms of organic life, although, as would naturally be expected, modified in the subdivisions by local peculiarities. Since the publication of the 'Silurian System,' large and expensive works on the subject have been issued from the presses of America and Europe, and Siluria seems to be singularly fortunate in the zeal and liberality of her illustrators. Among the more remarkable and interesting is the magnificent volume by M. Barrande. A native of France, and formerly tutor to the Comte de Chambord, to whom the work is dedicated, M. Barrande has, from circumstances, resided for twenty years on the Silurian soil of Bohemia. Commencing his researches